

Race, Rural Residence, and Wildland Visitation: Examining the Influence of Sociocultural Meaning¹

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ABSTRACT Previous studies have shown that African Americans have less favorable impressions about wildlands and recreate on wildland areas less frequently than do whites. However, most of these investigations have been conducted on non-rural populations. Rural perceptions of wildlands and visitation to such areas have received relatively little attention. In this exploratory study, we propose that race operates on wildland recreation visitation through the different meanings rural blacks and whites attribute to wildlands. We examine this hypothesis with a structural model which specifies wildland meaning as an intervening factor between race and visitation. Single equation results show blacks visit wildlands less, and have less favorable definitions of wildlands, compared to whites. However, when wildland meaning is included in the structural model, racial differences become insignificant. This suggests that the meanings different racial groups attach to wildlands help explain visitation. Both sex and age are also significant predictors of both wildland meaning and visitation.

Introduction

Most research on racial and ethnic group participation in outdoor recreation has shown that African Americans are less likely than other groups to engage in wildland recreational activities such as camping, hiking, or backpacking (Dwyer 1994; Dwyer and Hutchison 1990; Klobus-Edwards 1981; Washburne 1978; Washburne and Wall 1980). Landscape preference researchers also report that African Americans are less likely than other ethnic groups to express preferences for wildland, unstructured-type settings, in contrast to affected or built landscapes (Kaplan and Talbot 1988; Philipp 1993; Zube and Pitt 1981). While these findings have contributed to our understanding of the role of race in outdoor recreation and environmental perception, a critical limitation of these investigations is that the sampled populations were primarily urban respondents (Kaplan and Talbot 1988; Stamps and Stamps 1985; Washburne 1978; Zube and Pitt 1981). This urban focus raises the

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possibility that the wildland-averse sentiments and behavior reported for African Americans may be more a reflection of place of residence (i.e., a black,² urban perspective on wildlands) rather than a general black view of wildlands. Relatively little research has focused on either the recreation or scenic preferences of rural blacks. Research on these populations has been confined mostly to issues of family structure, career aspirations, racism, and economic deprivation (Gaudin and Davis 1985; Rankin and Falk 1991). However, it is incumbent upon rural sociologists to consider a broader array of issues surrounding rural ethnic group membership and also to define better the interaction of race/ethnicity and place and how these affect the behavior of rural minorities (Snipp 1996).

The recreational interaction of rural blacks with wildlands merits more attention because rural blacks live closer to the natural environment and have more direct, physical contact with wildlands than do their urban counterparts. Unlike urban African Americans, rural African Americans may have developed a familiarity with wildlands based more on real life experiences having less to do with mystery, danger, or myth. We propose that the meanings rural African Americans attribute to wildland recreation areas can help explain their interactions with such places. These wildland meanings, we believe, are influenced by both group-identity (which may be described as black culture) and by what Proshansky (1978) describes as place-identity. As Korpela (1989), Proshansky (1978), and Proshansky, Fabian, and Kaminoff (1983) argue, one's *physical* environment (i.e., place-identity) is just as important a socialization agent as are intangible norms, values, and beliefs. Proshansky (1978) states:

Whatever the subidentity or social role of the person, it clearly and necessarily involves the behaving and experiencing individual in a particular physical setting either alone or interacting with others. . . . the kaleidoscope of physical experiences that characterizes 'big city life' . . . is as much a part of the *socialization process* in the development of the urban dweller from birth on as are the various psychological, social, and cultural processes which have been emphasized almost exclusively in attempts to define this process [original italics].

A parallel argument can be made for the influence of the rural milieu. The physical sensations, folklore, and economics of the rural environment may combine to make rural blacks, in part, rural beings who have developed a pace of life, a perspective, that distinguishes them from urban blacks. We submit that, for rural

² African American and black are used interchangeably in this paper.

African Americans, these combined selves (black group-identity and rural place-identity) contribute to the formation of an out-of-doors perspective which is distinct from that held by either urban blacks or rural whites. Data limitations permit us to examine this hypothesis only for rural blacks and whites. However, our results are compared with results from studies which focused on urban blacks and outdoor recreation perception and behavior.

We propose a model of wildland visitation that includes race and other sociodemographic variables, along with a meaning dimension. Researchers investigating racial differences in visitation typically analyze models which control only for race and other sociodemographic factors. If significant racial differences persist when other variables are held constant, these differences are routinely attributed to general black/white leisure value differences or to differences in beliefs and attitudes about specific recreation environments (Hutchison 1987). In such analyses, meaning or perceptual differences are only inferred from racial differences rather than empirically examined (Taylor 1992:8–9). Few attempts have been made to examine more closely the nature of racial differences in behavior, although researchers have been calling for such studies for twenty-five years (Allison 1988; Lee 1972). We address this gap by focusing on the hypothesized links among race, meaning, and recreation behavior. Our model proposes that race operates on wildland visitation primarily via a constellation of beliefs and attitudes which reflects the meaning attributed to wildlands by racial groups. This is a symbolic interactionist view of wildland visitation in that it considers that the meanings or interpretations different sociocultural groups assign to wildlands affect these groups' interaction with such places (Lee 1972). Before exploring this model, we examine three factors: (1) whether rural blacks and whites differ with respect to wildland visitation; (2) if these groups attribute different meanings to wildland recreation areas; and 3) to what extent such meanings account for racial differences in visitation to wildland areas.

Azjen and Fishbein's (1977, 1980) research provides both theoretical and empirical support for the contention that attitudes (what we call meaning) can be reliable predictors of behavior. More recently, Bright and Manfreda (1995) found that both the salience of a given natural resource issue and multiple attitude measures helped increase the predictive ability of their model. Our study uses only a single attitudinal scale, and we do not evaluate the salience of wildland recreation areas. As this is an exploratory study, the goal of our investigation is not to identify an exhaustive list of attitudinal dimensions that improve predictive power; rather, we examine the general mediating effect of a meaning variable on visitation.

We use attitudes to denote meaning because we believe they reflect the symbolic meanings people attach to wildlands. Following Lindesmith et al.'s (1988:171-206) discussion of perception, memory, and motives, we view behavior as a result of two "signal systems" operating in the brain, the first involving objective, sensory input and a second, distinctively human system, that involves the interpretation of sensory input. The second signal level is governed by the social and cultural environment to which people belong. This signal level enables human beings to interpret stimuli according to their socialization, rather than simply respond to it. We believe the attitudes people hold about objects, in this case wildlands, are indicators of this second level of interpretation. This interpretation is the process of assigning meaning (Lee 1972).

Literature review of ethnic recreation theories

The two most frequently cited explanations for differences in black/white outdoor recreation are ethnicity and marginality. First articulated by Washburne (1978), marginality theory attributes minority (particularly black) differences in recreation behavior to societal inequities such as low socioeconomic status (SES), less disposable income, inadequate transportation, and lack of information about facilities. Proponents of this view argue that African Americans and whites have a similar propensity to engage in wildland recreation, the principal difference in actualization being attributed to the former's marginal economic status. Philipp (1995) also maintains that social class, as well as economic differences, distinguishes leisure behavior. He argues that marginality is more complex than annual income and that the impact of indicators such as SES should be viewed both cross-sectionally and temporally. For example, ethnic minorities who are first-generation middle-class may express different leisure preferences and behaviors than members of the same ethnic group who have been middle-class for several generations.

While not ignoring structural constraints, the ethnicity perspective attributes variances in recreation behavior to value differences based on subcultural norms. Ethnicity theory postulates that subcultures, or ethnic minorities, possess distinctive cultural value systems that shape and dictate their recreation behavior (Washburne 1978). This theory emphasizes subgroup choice or agency. African Americans do not engage in wildland recreation to a similar extent as whites because black culture places a higher priority on other forms of recreation. In another vein, opportunity and demographic theories view recreation behavior in terms of proximity to recreation resources (Lindsay and Ogle 1972). That is, if minority groups live in areas proximate to outdoor recreation areas, they will be more likely to visit these areas.

Other researchers have challenged such unidimensional explanations and posit instead that a number of factors work jointly to influence recreation behavior (Floyd and Gramann 1993). For instance, Carr and Williams (1993) argue that the marginality and ethnicity theories are part of a larger fabric that includes both sub-cultural norms and sociostructural factors within the same model. This may be more plausible, given that no single theory has been able to sufficiently explain the variance in outdoor recreation behavior.

Sociocultural meaning and wildland environments

The present study examines a broader explanatory model which considers both sociodemographic variables and meaning as explicators of wildland visitation. As previously discussed, the sociocultural meaning of wildlands for rural dwellers is posited to be a function of both ethnic group and place-identity. Lee (1972) first proposed this view of leisure which involves identifying the meanings people hold about recreation places in order to understand behavior towards such places. He argues that it is erroneous to consider outdoor recreation areas as "free" or decontextualized places that do not carry the normative constraints and considerations of everyday social life. Rather, outdoor recreation places are necessarily imbued with the same labels and definitions we apply to the rest of society.

We use the sociocultural paradigm as a context for examining the meaning rural African Americans attribute to wildland recreation places (Saegert and Winkel 1990). This paradigm stresses the importance of individuals and groups acting as social agents who both create and seek meaning from the environment. According to Saegert and Winkel (1990), the meanings people assign to outdoor places are not only constructed by individuals, they are also conveyed by the social and cultural group with which people are most intimately connected. Williams and Carr (1993:210) add that a "*sociocultural approach*" (original emphasis) elucidates linkages between the macro-level variables, culture and ethnicity, and the micro-level meanings people give to wildlands. Thus, in terms of socioculture, macro-level factors such as historical experiences and economic factors are assumed to distinguish the meanings African Americans attribute to wildland settings from those held by whites. With respect to black definitions of wildlands, Cleaver (1969:57-72), on the one hand, argues that blacks have learned to hate these places because of their forced association with such areas during slavery, Reconstruction, and the sharecropping era. For many blacks, Cleaver asserts, land (primarily agricultural land) came to represent oppression rather than economic or spiritual freedom, as in the case of white Americans (Nash 1973). In the same essay, how-

ever, Cleaver argues that blacks have developed a special affinity to the land, that it holds the same liberating potential for African Americans as it has (and does) for whites (Gramann 1996; Taylor 1989).

Burnett and Kamuyu (1994), Caron (1990), Hershey and Hill (1977-1978), and Meeker (1973) argue more strongly that, for early African Americans, the slave experience largely transformed their varied African-inspired ontologies based on holism to a world view of the land based on utilitarianism at best and apathy and fear at worst. Indeed, for much of the twentieth century, many blacks have sought to distance themselves from an agrarian existence. From about 1940 to the 1960s, the mass migration of blacks from the rural South to the urban North in search of manufacturing jobs, white collar positions, and urban living attests to these ideas and beliefs (Jaynes and Williams 1989). As Cleaver (1969:58) states: "In terms of seeking status in America, blacks—principally the black bourgeoisie—have come to measure their own value according to the number of degrees they are away from the soil." This attitude persists. Recently, the president of the Association of Black Travel Agents made a similar remark in a *Los Angeles Times* interview:

'I don't think people two generations away from sharecropping are interested in going back to the fields on their vacations. When people who have been poor a long time suddenly can afford a vacation, they're going to want to spend it on something a little more luxurious than a campground in the middle of nowhere.' [quoted in Gramann (1996:45)]

Our discussion, however, concerns southern, rural blacks, many of whom do not belong to the bourgeoisie. For this sub-population of African Americans, wildlands may take on an altogether different meaning. Rural blacks live closer to the natural environment and have more direct, physical contact with wildlands, either from working in such areas or from simply driving past wooded areas in their everyday routines.

Westmacott's (1992) study of southern, rural black yard designs and gardening practices revealed that rural, working-class blacks were actively involved in cultivating and landscaping their immediate outdoor environment. These activities contributed both to their self-identity and to their identity within the larger rural community. This study provides rich information about rural, black interactions with domesticated lands. However, the outdoor environment of interest in the present study is more akin to the unstructured, "untrammeled" descriptions of wilderness, as defined by the 1964 Wilderness Act (Public Law 88-577).

Marks (1991) comes closer to explicating the meaning of wildland environments with an exploration of the meaning hunting holds for rural blacks, whites, and Native Americans in North Carolina. His study is also insightful, but it is limited in that survey participants were all males involved exclusively in hunting. However, he did find that blacks were much less likely than Native Americans or whites to feel that the enjoyment of nature was an important part of the hunting experience. This implies that, for blacks in his sample, hunting is a more utilitarian than an aesthetic activity.

A few studies have examined the influence of residence on recreation participation for blacks, but none have specifically examined rural black perceptions of outdoor environments and how these perceptions influence outdoor recreation choices (Craig 1972; Klobus-Edwards 1981; O'Leary and Benjamin 1982; Philipp 1986; Woodard 1988). For instance, Klobus-Edwards (1981) found that blacks in predominantly black neighborhoods had significantly higher participation than blacks in integrated neighborhoods for activities such as camping, picnicking, boating, and jogging. However, blacks in racially mixed communities showed significantly higher preferences for wildland activities such as backpacking, orienteering, and fishing. O'Leary and Benjamin (1982) found that rural blacks were more likely than either urban dwellers or rural whites to select recreation activities based on cost. Rural blacks were also more likely than the other groups to view their participation as a way to meet new people, be with family and friends, and teach others about recreation.

Cognitive and affective components of wildland meaning

According to Williams and Carr (1993:211), sociocultural meanings of wildland places include both cognitive and emotional elements. We propose that the cognitive aspect relates to the different ways blacks and whites conceptualize or organize their interaction in outdoor recreation places. To discover the cognitive components of wildland meaning, we reviewed the ethnic leisure literature to determine what issues or factors differentiated black and white outdoor recreation. This search revealed three factors. The first is the tendency for blacks to engage in collective recreation activities (Dwyer 1994; Dwyer and Hutchison 1990; Gobster and Delgado 1993; Hutchinson 1974; Kraus and Lewis 1986; Lee 1972; McDonald and Hutchinson 1986; Murphy 1970). The collective leisure tendency may result from a history of restricted social and economic opportunities. During the era of legally sanctioned segregation, black social activities were largely limited to specific areas and activities (Murphy 1970; Puckett 1926). The idea of independent exploration of wilderness lands for the sake of recreational escape

and self-realization would have seemed quite fantastic to many blacks, given that their everyday lives were so constricted.³ For the most part, black areas of traverse were limited to urban ghettos and to the black "bottoms" which still exist in many southern towns. This collective approach to involvement may also be a carry over from collective African societies (Mbiti 1969:1-57; Simcox 1993).

The second factor which differentiates black and white outdoor recreation is a preference for developed recreation settings (Dwyer and Hutchison 1990; Gramann 1996; Philipp 1993; Washburne and Wall 1980). Preferences for developed outdoor areas may reflect an aversion for manual or field labor, as discussed above; however, this may also reflect the primarily urban residence of African Americans, many of whom may be more familiar with the built environment (Zube and Pitt 1981). We do not wish to convey that blacks are absolutely averse to natural environments. Rather, the research suggests that blacks prefer environments that are affected in some way or show some deliberate landscaping (Peterson 1977; Kaplan and Talbot 1988).

The third cognitive factor which differentiates black and white outdoor recreation is a heightened concern for safety in recreation settings among African Americans. Blahna and Black (1993) report that blacks, more than other ethnic groups, are cognizant of the potential for race-related crime and other random violence when they recreate in the outdoors. West (1989, 1993) charges that researchers have not paid adequate attention to the social aspects of recreation participation and the potential for racial conflict in park settings. West (1993) discusses outdoor recreation in terms of hostile, white opposition to blacks in "white territory," citing reported incidences of racial antagonism and violence from white visitors directed against blacks. For example, white park visitors in Chicago posted signs warning "whites only; niggers keep out," and neo-Nazis killed a black park visitor in a Seattle park. These are isolated examples; however, when the larger black population becomes aware of such violent attacks, these offenses become personalized, vicariously lived experiences in that the discrimination occurred because the victims were black.

The emotional or affective component of wildland meaning is indicated by place attachment. Place attachment denotes a deep, primarily emotional and symbolic bonding to a specific place or type of place which develops as a result of sustained interaction with a given environment (Low and Altman 1992; Stokols and Shumaker 1981; Williams and Carr 1993). The concept derives from the envi-

³ An exception would be fishing and to some extent hunting. Historically, blacks have engaged in these activities for both subsistence and recreation (Craig 1972; Puckett 1926). But even for these familiar activities, blacks have not had the same access to land as whites (Marks 1991).

ronment and behavior literature, where it has been used by landscape architects, geographers, and more recently, recreation researchers to assess people's involvement with recreation places (Williams et al. 1992). Attachment differs from mere preference in that attachment to a place can develop irrespective of physical conditions. It has more to do with the essence of a place and with what this atmosphere connotes to the "attached" individual (Riley 1992). Attachment develops primarily from what is experienced in a particular environment. Thus, our wildland meaning construct consists of three cognitive components: collective recreation preference, developed site preference, and safety concern; and one affective component, place attachment.

Methods

Data collection

Rural was defined as any municipality of less than 10,000 inhabitants. The sample was selected from 1990 census tracts of a six-county area surrounding the Apalachicola National Forest in Florida.⁴ The counties included were Calhoun, Franklin, Gadsden, Gulf, Liberty, and Wakulla. We refer to this area collectively as the "Apalachicola Region." The black sample was drawn at random from white page telephone directories in census tracts that contained at least fifty percent black households. The white sample was selected at random from the tracts, irrespective of racial density.

The survey instrument was administered as a household, mail survey. Surveys were mailed in late December 1994, followed two weeks later by a postcard reminder to non-respondents. Three weeks after the postcard reminder was mailed, a replacement survey was sent to those who still had not responded. Following Dillman (1978), the postcard reminder and replacement survey were sent to help increase response rate and reduce non-response bias. Undeliverable addresses and surveys that came back marked "return to sender" reduced the original sample of 1,800 to 1,177. The number of completed surveys was 467, a response rate of 39.7 percent. Of these, 427 were usable: 303 white and 124 African American. Responses from racial or ethnic groups other than African American or white were not included in the analyses. These comprised less than five percent of the sample.

To reduce sex bias in the sample, we asked that the adult in the home, eighteen or over, who most recently had a birthday complete the questionnaire. To assess the representativeness of the sample, we compared aggregated sample characteristics—race, sex, age, education, children (presence of minor children in household), and household income—to 1990 U.S. census figures for the population

⁴ Survey Sampling, Inc. One Post Road, Fairfield, CT. 06430.

Table 1. Comparison of population, sample, and racial group characteristics

Characteristic	Population	Sample		
		Sample N = 427	Blacks N = 124	Whites N = 303
Percent black	31.00	29.00 (0.45)	—	—
Percent male	47.00	50.80 (0.50)	33.60 (0.47)	57.51 (0.50)
Median age	40–44	51.78 (15.65)	52.38 (13.90)	51.55 (16.31)
Percent college or technical school graduate	51.00 ^a	49.88 (0.50)	46.77 (0.50)	51.48 (0.50)
Percent children <18	36.00	36.65 (0.48)	45.16 (0.50)	32.78 (0.47)
Median household income	\$17,000–25,000	\$35,000	\$26,800	\$40,000

Chi-square tests showed the black and white samples were significantly different for sex ($p = 0.001$); minor children ($p = 0.016$); and median household income ($p = 0.023$). Number in parentheses is standard deviation.

^a Includes only those 25 years of age and older.

(U.S. Department of Commerce 1991a; U.S. Department of Commerce 1991b; U.S. Department of Commerce 1992; U.S. Department of Commerce 1993). We also compared the black and white subsamples on the above characteristics. These results are presented in Table 1.

The sample and population were comparable for race, sex, education, and minor children. We feel confident in comparing population and sample educational attainment because less than five percent of the sample was under twenty-five. Sample age and household income are skewed to the upper ranges. However, over the remaining characteristics, our sample provides a fairly good representation of the population. Within the sample, the racial groups were statistically different for sex, minor children, and median household income. The overall response rate is low; however, this is not unusual for mail surveys where no previous contact with respondents has been established (Dillman 1978:2). Also, across racial groups, males and females responded differently. We accept these limitations and acknowledge the accompanying problems of generalizability rather than disregard the data without even considering the information they offer on this important topic.

Constructing an empirical measure of wildland meaning

The wildland meaning measure is a simple additive scale consisting of twenty-six items developed by the authors and six items from

Williams et al. (1992). The questions were designed to measure each of the four wildland meaning dimensions.⁵ Each question was measured with a five-point Likert scale ranging from strongly disagree (1) to strongly agree (5). For example, the statement: "Wooded recreation lands should be developed into something of more practical use" was used to measure the developed setting preference dimension; "I recreate in wooded areas because they give me a chance to be alone" was intended to measure the collective or group preference dimension. The six wilderness attachment statements adapted from Williams et al. (1992) were included to capture the place attachment dimension. For example, one of these statements reads, "I get more satisfaction from visiting wooded areas than any other type of recreation area."

Both exploratory and confirmatory factor analyses were performed on the wildland meaning scale. Exploratory factor analysis was first conducted on a mail and telephone pretest from rural counties adjacent to the Oconee National Forest in Georgia. This analysis produced a Cronbach's alpha⁶ of 0.47 and indicated four wildland meaning factors—developed preference, collective preference, safety concern, and place attachment. Confirmatory factor analysis was then conducted on the revised scale administered to the Apalachicola sample (Long 1983). The confirmatory analysis indicated two underlying factors rather than four: place attachment and a combined safety/developed preference factor. Results did not show strong support for the collective preference factor. The confirmatory factor analysis helped to assess further the reliability of the wildland meaning scale. The composite reliability⁷ for the place attachment and safety/developed factors was 0.93 and 0.85, respectively. The high reliability scores indicate that the scale is a reasonable measure of wildland meaning. Greater confidence can be placed in the analytic results of wildland meaning in subsequent analyses.

To use the wildland meaning variable in the analyses, we constructed a mean wildland meaning score for a unidimensional scale based on fourteen items remaining from the confirmatory analysis. If a scale item had a missing value, it was replaced with the mean score for that item, and approximately ten percent of the scale re-

⁵ A list of the wildland meaning items is available from this paper's first author, Cassandra Johnson.

⁶ Cronbach's alpha is a measure of internal consistency for a scale. Values range from zero to one, with values closer to one indicating higher reliability (Zeller and Carmines 1980).

⁷ Composite reliability is similar to Cronbach's alpha. It is used in confirmatory factor models to assess correlation among questions that measure latent factors. Values also range from zero to one. Larger values indicate higher internal consistency among items that measure a factor (Hatcher 1994).

sponses were replaced with mean scores. We intended to use logistic regression to analyze the effect of wildland meaning, so the mean scores were recoded to correspond to the ordinal ranking of the Likert scale (one to five). Scores of 1.49 and less were coded 1 (strongly disagree); 1.50 to 2.49 were coded 2 (disagree); 2.50 to 3.49 were coded 3 (undecided); 3.50 to 4.49 were coded 4 (strongly agree); and 4.5 to 5 were coded 5 (strongly agree). Thus, if a respondent had a wildland meaning score of one or two, this would indicate a relatively negative impression of wildland recreation environments. Alternatively, a score of four or five would indicate a relatively positive impression of wildlands.

Causal model

On the basis of the literature reviewed above, we propose a causal model which specifies that race operates on visitation primarily through the meanings associated with wildland recreation places (Figure 1). The model assumes an asymmetrical, recursive relationship among variables. Interpretation of the model flows from left to right, where race (being African American) has a negative effect on wildland meaning (resulting in lower scores); and because wildland meaning and wildland visitation are assumed to be positively related, low scores on wildland meaning should correspond to lower visitation.

Age, sex, education, and minor children are included primarily as control variables, although age and children are expected to have a direct effect on wildland visitation (Hartmann and Cordell 1988).⁸ Increasing age is expected to be negatively related to visitation; males and more highly educated people are expected to have more positive definitions of wildlands; and households with under-age children are expected to be associated with more positive responses on visitation.

Measurement

All independent variables, except age and wildland meaning, were dichotomous. Race was coded one for blacks and zero for whites. For sex, males were coded one and females zero. Children was coded one for underage children in the home and zero for no underage children. Education level denotes high school education or less (zero) and college or technical school graduate (one). Age was measured in number of years, and wildland meanings was mea-

⁸ Household income is not included in the analyses because only two-thirds of respondents reported income ($N = 276$). However, we analyzed numerous iterations of the model which included income as a predictor variable. Income was not significant in any of the models, and no collinearity was detected among income and other independent variables.

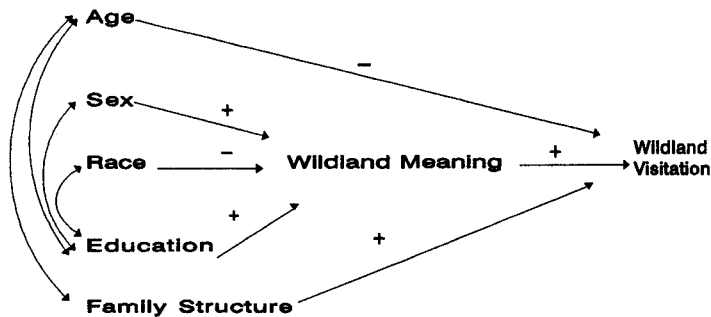


Figure 1. Causal model of wildland visitation

sured ordinally—one (strongly disagree); two (disagree); three (not sure); four (agree); and five (strongly agree). Visitation to wildlands was measured with the question: “Do you go to the woods⁹ to camp, hunt, fish or do any other kind of recreation?” The question was measured as a dichotomous choice, where one was yes, and zero was no. Don’t know responses were omitted from the analyses.

Logistic regression analysis

Wildland visitation

The first model was a logistic regression, where the probability of a respondent reporting a visit to a wildland area ($Y = 1$) was modeled as a function of race, sex, age, education, and children. The logistic equation gives the logit of the probability of an outcome, for example the logit in favor of wildland visitation, where the logit is obtained by:

$$Z = b_1 + b_2x_2 + \dots + b_nx_n, \quad (1)$$

and the x ’s are explanatory variables. The actual probability associated with a positive visitation response is then derived from:

$$P = 1 / (1 + e^{-Z}) \quad (2)$$

(Gujarati 1988:481–489; Glasgow 1995).

⁹ We used the term woods rather than wildland because the former was thought to be more familiar. The survey defined woods or wooded as “any undeveloped, natural, forested setting where recreation is allowed. For example, people may camp, hunt, or fish in these areas. But the area must not have any man-made structures or facilities like basketball courts, picnic areas, tap water, telephones, or other services; but there may be trails and dirt roads leading into and out of the area.” Respondents were urged to keep this definition in mind when answering the questions.

Table 2. Logistic regression estimates: wildland visitation and wildland meaning

	Wildland visitation	Wildland meaning
Sample mean	0.68 (0.47)	3.46 (0.97)
Black mean	0.46 (0.50)	2.79 (0.85)
White mean	0.76 (0.43)	3.74 (0.88)
Parameter	MLE coeff.	MLE coeff.
Intercept 1	—	-0.94 *
Intercept 2	—	1.32 *
Intercept 3	—	3.47 ****
Intercept 4 ^a	2.05 ***	5.78 ****
Race	-1.20 ****	-1.83 ****
Sex	1.05 ****	1.22 ****
Age	-0.03 ***	-0.03 **
Education level	0.39	0.08
Children	0.05	-0.10
Model chi-square	78.54	132.67
Significance level	0.0001	0.0001
% correct predictions	75.90	74.70

* $p \leq 0.05$; ** $p \leq 0.01$; *** $p \leq 0.001$; **** $p \leq 0.0001$. Number in parentheses is standard deviation.

^a Intercept 4 for the wildland meaning equation. Intercept 1 for wildland visitation equation.

The logistic regression tested for racial differences in visitation while holding the other sociodemographic variables constant. Column two of Table 2 shows results of analyses for wildland visitation. The upper portion of the column shows that white visitation is about 1.65 times that of black visitation. This difference is statistically significant at $p = 0.0001$. The middle portion of column 2 shows the intercepts, coefficients, and significance levels for the independent variables. Substituting values for the explanatory variables into (1) and then solving for (2), we see that the probability of a positive response to the visitation question for a black male, age thirty, with education beyond high school, and no children is 0.81. The probability of a positive response for a white respondent with the same characteristics is 0.93. Sex and age are also significant for wildland visitation, and both have the predicted effects.

Wildland meaning

The second model was also a logistic regression, where the probability of observing a score of one through five was a function of race, sex, age, education level, and children. The black and white mean scores were 2.79 and 3.74, respectively. Blacks, compared to

whites, viewed wildland recreation environments with less favor. Column two of Table 2 shows that race is significant at $p \leq 0.0001$. Again substituting values into the wildland meaning equations, we see that the probability of scoring two or less on the dependent, that is, having a relatively negative impression of wildlands, would be 0.023 for a white male respondent, age thirty-four, no children under eighteen, and education beyond high school. The probability of a black male with the same characteristics scoring two or less would be 0.129, about six times as high. On the opposite end of the scale, the predicted probability of a white male with the above characteristics scoring five, having a relatively positive wildland meaning score, would be 0.34, but it would be only 0.08 for a black male with similar characteristics. Hence, the negative race coefficient ensures that cumulative probabilities for a given score will be smaller for African Americans than for whites. This indicates that being African American is negatively related to wildland meaning, other factors being equal. Besides race, sex and age are again significant at $p \leq 0.0001$. Females and older respondents tend to respond to the scale similarly to African Americans.

We tested for collinearity among the independent variables by examining the eigenvalues of the correlation matrix for the independent variables and the condition indices for those variables (Gujarati 1988:298–302; SAS Institute 1991:95–99). These diagnostics detected no serious collinearity.

Examination of the causal model

We examined the causal model with a two-step logistic regression of wildland visitation. Results from the reduced form of the model are shown in Column one of Table 3. The reduced form of the model does not include wildland meaning. Race was forced into the model while the other sociodemographic variables were added based on their significance levels. To be included, a variable had to be significant at 0.05 or less. Again, only race, sex, and age were significant at this level.

Column two of Table 3 presents results from the full model where wildland meaning is added to the analyses. Wildland meaning and age are significant at $p \leq 0.0001$ and $p \leq 0.05$, respectively. Both race and sex fall out as significant predictors. Again, collinearity diagnostics indicated no collinearity among wildland meaning and the other independent variables. To illustrate these findings, consider the probability of a "yes" visitation response for a black female, age thirty, with no underage children, education beyond high school, and a wildland meaning score of two. The probability of visitation for this individual would be 0.27. The probability of a positive response would increase to 0.91, given a meaning score of four. Hence, the higher the wildland meaning score, the more

Table 3. Two-step logistic regression of wildland visitation on race, sex, age, education, children, and wildland meaning

Parameter	Reduced model MLE coeff.	Full model MLE coeff.
Intercept	2.40 ****	-3.82 ****
Race	-1.20 ****	-0.24
Sex	1.05 ****	0.43
Age	-0.03 ****	-0.02 *
Education level	—	0.31
Children	—	0.05
Wildland meaning	—	1.66 ****
Model chi-square:	75.78	176.99
% Correct predictions	75.40	87.40
AIC	466.56	371.34
$p \leq$:	0.0001	0.0001

* $p \leq 0.05$; **** $p \leq 0.0001$

likely a respondent is to report visitation to wildlands, other factors being equal.

Both the direct and indirect effects of race on visitation can be determined from the reduced and full models. The indirect effect is calculated by subtracting the direct effect from the total effect coefficient (Alwin and Hauser 1975). The first column of Table 3 shows that the total effect of race on visitation is -1.20; and column 2 shows the direct effect is -0.24. Thus, the indirect effect is -0.96. As predicted, the coefficients for both the total and indirect effects are negative. The relative size of the total and direct coefficients shows that 80 percent of the total race effect on visitation is indirect, via wildland meaning.

To examine the substantive effects of race on visitation in the model that includes wildland meaning, consider again the example of the two thirty-year old males with no underage children and education beyond high school. Both subjects have a wildland meaning score of four. The probability of a black respondent visiting would be 0.94; for the white respondent it would be 0.95. In this model, racial differences are substantially reduced, given that subjects attribute similar meaning to wildland areas.

The chi-square residual and Akaike Information Criterion (AIC) were used to assess fitness of the reduced and full models (Table 3). Our analyses suppose that the full model, which includes wildland meaning, will provide a better fit over the model that does not include the meaning variable. Chi-square values for both reduced and full models were significant at $p \leq 0.0001$. However, the higher chi-square value for the full model indicates that it provides a better fit over the reduced form model. In addition, the chi-square residual or difference between the models (176.99-75.78) was sig-

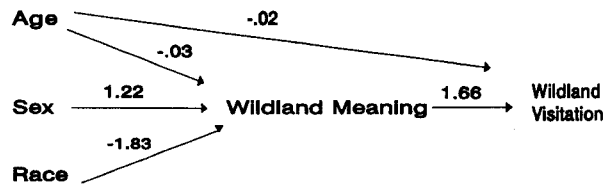


Figure 2. Revised wildland visitation model

nificant at $p \leq 0.001$. When comparing alternative models, lower values of AIC indicate a superior fit (SAS Institute 1990). The AIC for the full model was lower than the AIC for the reduced model by about 95 points. Hence, the AIC test also indicates that the full structural model is an improvement over the reduced form.

These findings can be summarized in the form of a "final" path model which includes only those variables that were significant predictors of the endogenous variables. Figure 2 depicts these relationships, along with the path coefficients. As the theoretical model proposes, both race and sex are significant predictors of wildland meaning, and the coefficients have the predicted effects. Race has a negative relationship with wildland meaning, and sex has a positive relationship with wildland meaning. Age is also significant for both endogenous variables, and it has the expected effect. Contrary to predictions, however, education is not a significant predictor of wildland meaning. Neither is presence of children significant for visitation. As predicted, wildland meaning is the most significant explicator of visits, its effects mediating those of both race and sex.

Conclusion

This research compared black and white visitation to wildland recreation areas, examined racial differences in meaning attributed to wildlands, and assessed the impact of meaning on visitation for blacks and whites. The rural milieu from which our sample was drawn was important in these analyses because of the hypothesized race/place perspective; that is, we proposed that rural African Americans have distinct impressions of wildland areas based on both their membership in the black subculture and their residence in rural areas. Regression results showed significant black/white differences in both visitation and meaning, with African Americans reporting fewer visits and having less favorable impressions about wildlands. These results are similar to those reported elsewhere by Zube and Pitt (1981); Kaplan and Talbot (1988); and Philipp (1993). The congruency of our results with these earlier, urban-focused findings suggests that the "wildland aversions" reported for urban blacks may be generalized to rural blacks as well. The wildland

visitation patterns and perceptions of our sample of rural blacks and whites appear to be similar to those of non-rural populations.

Results also showed that the wildland meaning variable substantially reduced the direct effect of race on visitation. This finding implies that differences in reported visitation correspond, in part, to differences in how respondents perceived wildland areas. Thus, it may be that the meanings and impressions people attach to wildlands are more salient than race in predicting behavior towards wildlands. Perhaps when black/white differences are reported for wildland visitation, part of this variation may have to do with how the two groups perceive wildland settings.

This study demonstrates that, in studying behavior differences in wildland visitation, it is important to consider the subjective aspects of wildlands, what these places connote to different racial, ethnic, and subcultural groups. This is an important consideration for wildland recreation usage because of the different historical relationships blacks and whites have had with the land in this country. This reference to symbolic interactionism enhances our understanding of how different societal groups interpret the natural environment. The distinctly human capability of assigning labels or meaning to objects enables us to choose how we will respond to those objects; however, such choices are informed, in part, by an individual's or group's most intimate sociocultural affiliation. The results for the wildland meaning scale suggests that the labels, words, or meanings that rural African Americans assign to wildlands are different from the meanings rural whites give these places. From a symbolic interactionist standpoint, it follows then that blacks and whites would respond differently or have different visitation rates to these areas.

Sex and age were also important predictors of wildland visitation. This was not entirely unexpected, given that wildland area exploration is a predominantly male activity, and it tends to decline with age. It was also interesting to see that women, older people, and African Americans responded similarly to the wildland meaning scale. This suggests that the scale contains some element common to each of these groups. It may be that the scale taps a general sense of vulnerability in outdoor recreation settings. It can be argued that minorities, women, and older individuals generally feel a greater sense of vulnerability than other groups in American society.

We used quantitative methods to test for the effects of meaning on behavior. However, meaning is highly subjective. It almost resists definition, let alone interpretation. Responses elicited from survey participants were limited to the etic level, that is, to predefined response categories. Respondents were asked to express the meanings they held for wildlands in terms of an ordinal scale. However, it may be that respondents assigned additional or alternative mean-

ings to wildlands which were not accounted for by our wildland meaning scale.

In future research, we would recommend using ethnographic analyses, either alone or in conjunction with quantitative assessments. Harris et al. (1995) discuss the usefulness of both feminist and narrative theory and methods in helping to generate data. Such ethnographic methods can be particularly useful with older, rural residents in eliciting more traditional views of the land or the more emic levels of wildland meaning. We also recommend further testing of the wildland meaning scale, which could include multiple measures of the construct and an indicator of how important wildland visitation is to the respondent.

This study was exploratory. It is presented as a starting point to what we hope will be further discussions and investigations on the role of meaning in outdoor recreation and environmental perception for rural populations.

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